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PATENT
Docket No. 325772014200

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Nancy T. DeRiggi

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Patent Application of:
Kenichi SAWADA

Application No.: 09/484,540 Confirmation No.: 9807

Filed: January 18, 2000 Art Unit: 2623

For: IMAGE PROCESSING APPARATUS Examiner: Jingge Wu

APPELLANT'S REPLY BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Sir:

Kindly consider this reply to the Examiner's Answer dated May 17, 2004. Arguments made below with respect to claim 1 are applicable to all pending claims.

ARGUMENT

I. The rejection of claims 1, 2, 7-12, 17-20, 26, 27 and 31-34 as being unpatentable over Katayama in view of Suzuki should be reversed.

A. The Examiner misconstrued claim 1 by failing to give the claims under examination their broadest reasonable construction that is consistent with the written description of this application.

Appellant submits that the Examiner misconstrued the claimed feature of including "an edge enlarging portion for enlarging the edge area detected by the edge detecting portion." The claimed edge enlarging portion performs the function of enlarging an edge signal. The specification of this application at page 7 describes this function as follows:

> The edge signal EDG1 is given to an edge enlarging portion 6. The edge enlarging portion 6 includes line memories 101-108, a 9 x 9 matrix circuit 109, negative logic OR circuits 110-113 and an enlarging level selecting circuit 114 as shown in Fig. 2. The line memories 101-108 are circuits for delaying the edge signal EDG1 by lines. This configuration can perform 9 x 9 matrix operation, so that the **edge signal EDG1 can be enlarged by a width of four pixels** at most in the main scanning direction and the sub scanning direction.

As can also be seen from Fig. 5, Enlarged Edge Signal EDG2 is also wider than original Edge Signal EDG1. While the disclosure of the application is not limited by these two examples, the specification and figures generally illustrate that the claimed edge enlarging portion for enlarging the edge area modifies an image to enlarge an edge.

In determining whether to reject claims, the Examiner is required to give the claims under examination their broadest reasonable construction *consistent with the written description.* (See *In re Freeman*, 30 F.3d, 1459, 1464, 31 USPQ2d 1444, 1447 (Fed. Cir. 1994) and *In re Donaldson*, 16 F.3d, 1189, 1192, 29 USPQ2d 1845, 1848 (Fed. Cir. 1994) (en banc).) It is clear that the Examiner's claim construction is not consistent with the written description of this application. While Appellant notes that the Examiner has not identified what the Examiner

regards as the proper construction of the claimed "edge enlarging portion," the Examiner's claim construction is implicitly given by the Examiner's citation of certain portions of Katayama in the Examiner's Answer. In order for the cited portions of the reference to satisfy the Examiner's claim construction, that construction must require that the claimed "edge enlarging portion" include the selection of an enlarged area peripheral to an edge without modification of the image.

Such a claim construction is inconsistent with the written description of this application. Appellant further submits that none of the portions of the reference cited by the Examiner disclose modifying an image to enlarge an edge. Katayama does not disclose anything that could satisfy a claim construction consistent with the written description. If the Examiner had applied a claim construction consistent with the written description of this application, the Examiner would have recognized that that Katayama does not disclose the claimed systems and methods for edge enlargement.

B. Katayama teaches only edge enhancement, edge removal and the selection of an enlarged area peripheral to an edge and does not teach the claimed edge enlargement portion of claim 1 as properly construed.

In the first and second Office Actions as well as the Examiner's Answer, the Examiner concluded that Katayama discloses the claimed "edge enlarging portion." In support of this conclusion, the Examiner has made references in Katayama to a portion of the Summary of the Invention and a portion of claim 19. Appellant respectfully submits that Katayama teaches only edge enhancement, edge removal and the selection of an enlarged area peripheral to an edge and does not disclose edge enlargement according to claim 1 as properly construed.

In the Examiner's Answer, the Examiner cited col. 2, lines 63-66, and col. 27, lines 39-41 as disclosing the claimed "edge enlarging portion." The first portion of the Summary of the Invention cited by the Examiner recites a "means for thickening the line image portion of the

specific color." (Col. 2, lines 65-66.) The structure corresponding to this "means for thickening the line image portion of the specific color" mentioned in the Summary of the Invention is not described or in any way supported elsewhere in the specification or claims of the Katayama reference. In fact, no thickening of any sort is described in the reference. Katayama only teaches a means for emphasizing an edge and does not teach thickening the line image portion or enlarging an edge. The Examiner has not identified any support for the thickening recited in the summary and Katayama does not provide an enabling disclosure of "thickening the line image portion," whatever that may be.

The Summary of the Invention also lists a "discrimination means for discriminating an edge portion of a specific color of the image data" (col. 2, lines 29-30) and a "means for emphasizing an edge of input image data" (col. 2, lines 52-53). Neither of these could be taken to be the claimed "edge enlarging portion." The "edge enlarging portion" of claim 1 of this application is also not described in these portions of the Katayama specification.

The Examiner also stated that the claimed edge enlarging portion is taught at col. 27, lines 39-41 which corresponds to element (e) of Katayama claim 19. In fact, the only mention of edge enlarging anywhere in the Katayama reference is in claim 19 and its two dependents, 21 and 22. These claims are reproduced below. These claims are in means-plus-function format and recite function without any structure.

19. An image processing apparatus comprising:
a) input means for inputting color image data representing a color image;
b) first detecting means for detecting an edge portion in the color image;
c) second detection means for detecting a portion having a specific color;
d) discrimination means for discriminating the edge portion having the specific color based on the detection result of said first and second detection means;
e) **enlarging means for enlarging the edge portion of the specific color discriminated by said discrimination means**;
f) first encoding means for encoding the edge portion of the specific color enlarged by said enlarging means by using a first encoding method; and

g) second encoding means for encoding the color image data of at least a portion of the color image other than the edge portion of the specific color enlarged by said enlarging means by using a second encoding method different from the first encoding method.

21. An apparatus according to claim 19, **wherein said enlarging means enlarges the edge portion of the specific color in accordance with color component discrimination of pixels around an objective pixel.**

22. An apparatus according to claim 19, further comprising means for substituting input an image data portion corresponding to a pattern obtained by said enlarging means with an average value of image data of pixels of the input image data.

Limitation (e) of claim 19 of Katayama refers to an "enlarging means for enlarging the edge portion of the specific color discriminated by said discrimination means." However, because there is no enlarging means described in the specification, Katayama fails to disclose the "edge enlarging portion for enlarging the edge area detected by the edge detecting portion" of claim 1 of this application. As discussed above, the Katayama specification teaches only edge enhancement, edge removal and the selection of an enlarged area peripheral to an edge. Appellant respectfully submits that the recited "enlarging means for enlarging the edge portion...discriminated by the discriminating means" refers only to the selection of an enlarged area peripheral to an edge area as discussed in more detail below.

Appellant respectfully submits that a review of Katayama beyond the portions cited by the Examiner reveals that the teachings of Katayama, taken as a whole, are either inconsistent with or irrelevant to the claims of this application. According to Katayama, "[t]he peripheral portion [of a character] forms an edge portion, and the edge portion causes degradation of orthogonal conversion encoding efficiency." (Col. 1, lines 66-68.) As Katayama notes, the edge portion of the image causes degradation and is therefore undesirable. Thus, the reference teaches edge enhancement followed by edge elimination. The reference does not teach edge enlargement at any point.

The most important feature of Katayama is that a "black line image of an input image is detected an is encoded separately." (Col. 9, lines 66-67.) In connection with this separate encoding, Katayama discloses a method of detecting a black character (col. 10, lines 46) and "a means for emphasizing an edge of a ... signal so as not to lose achromatic properties around a black character portion ... and a means for subtracting the black character portion and the achromatic portion from an original image in units of pixels and substituting the subtracted portion with an average value of the surrounding colors." (Col. 11, lines 39-47.)

Figs. 11A and 11B show the edge enhancement before the black character subtraction. In both figures, an edge emphasis unit (212) is positioned before Black Character Elimination and Average Value Substitution Unit (221). "The edge emphasis unit 212 performs edge emphasis for only the Y signal." (Col. 12, lines 63-64.) The Y signal represents the luminance signal. (Col. 11, lines 47-49.) Figs. 12A, 12B and col. 13, line 62 – col. 14, line 47 explain operation of the edge emphasis unit. The disclosed edge emphasis function operates by increasing the luminance component of the objective pixels. (Eqns. 5-A – 5-D) An increase in the luminance signal cannot and does not perform the function of an edge enlarging portion. The end result of the edge emphasis is described in the specification as follows: "[a]n edge of a black character portion can be made sharp. A portion which is erroneously printed solid by conventional techniques can be clearly reproduced." (Col. 14, lines 44-47.) Any form of edge enlargement would be contrary to the stated purpose of the disclosed system.

Figs. 13A to 13D show black character subtraction. In preparation for the separate encoding of black characters, binarized black characters are subtracted from the original image. The result of this subtraction is shown in FIG. 13D of the reference. Katayama notes that

> As is apparent from hatched portions in FIG. 13D, edges are formed again in an image from which a black character is eliminated. When this result is encoded by orthogonal conversion encoding, encoding efficiency is greatly degraded. **The edge portions in FIG. 13D are unnecessary from the viewpoint of image quality. These portions are therefor [sic] eliminated from the color image and are substituted with the average value of the pixel values in the block.**

(Col. 14, lines 56-64, emphasis added.) Thus, Katayama clearly shows the elimination of edges from black characters. Similar systems and methods are disclosed in connection with Color Character Elimination Unit 307 and described at col. 22, lines 10-61. Like the black character edge elimination, edges associated with color character elimination are removed. The specification discloses that "[a]t this time, by subtracting the color character, an edge generated as shown in FIG. 25B is also eliminated ... As shown in FIG. 25C, data of a pixel ... which is included as surrounding pixels of the color character is also subtracted, and the eliminated portion is substituted with an average value of other pixel data within this block." (Col. 22, lines 22-26.) Because these edge portions associated with black and color character removal are deemed undesirable by Katayama, any form of edge enlargement would be contrary to the stated purpose of Katayama's system.

Katayama does disclose an achromatic color judgment unit 219 which is used to detect an achromatic portion around a black character. "In order to obtain a judgement area signal, values within the 3 x 3 block are logically ORed. That is, even if at least one achromatic pixel is present within the 3 x 3 block containing the objective pixel, the objective pixel is judged as an achromatic portion." (Col. 15, lines 20-24.) This area, as shown in Fig. 14C, is stored in the frame memory 220. (Col. 15, lines 25-26.) As a result, an achromatic portion peripheral to a black character may be identified as part of an edge and the edge portions can be encoded separately. (Col. 17, lines 60-64.) Thus, while the area identified as being achromatic (*e.g.*, black or white) is processed and encoded separately from the rest of the image, neither the original edge nor its peripheral area are actually enlarged. No part of the original image itself, including any edge, is modified in the disclosed process. For the aforementioned reasons, Katayama does not show the claimed features of claim 1 of this application.

C. The Examiner has not identified an enabling disclosure of the claimed edge enlarging portion.

The Examiner has failed to present sufficient evidence that the claimed "edge enlarging portion" is disclosed anywhere in the Katayama reference. As discussed above, the Examiner has identified two portions of the reference as disclosing this claimed feature. The first portion at col. 2, lines 63-66 from the Summary of the Invention recites a "means for thickening the line image portion of the specific color." The second portion at col. 27, lines 39-41 from claim 19 recites an "enlarging means for enlarging the edge portion of the specific color discriminated by said discrimination means." The Examiner has not identified any additional disclosure of these means-plus-function elements elsewhere in the reference.

Katayama does not disclose or in any way explain how the enlarging means recited in claim 19 operates. Claims drafted in means-plus-function form according to the last paragraph of Section 112 must still meet the requirement of definiteness for claims imposed by the second paragraph of Section 112 and must still find adequate support in the specification under the enablement requirement imposed by the first paragraph of Section 112. (See *In re Hyatt*, 708 F.2d 712, 218 USPQ 195 (Fed. Cir. 1983) and *Atmel Corp. v. Information Storage Devices, Inc.*, 198 F.3d 1374, 53 USPQ2d 1225 (Fed. Cir. 1999).) With respect to the "means for thickening" recited once in the Summary of the Invention, Appellant notes that the Examiner has not identified any other mention of "thickening" in the specification. The Examiner does not cite any other portion of the reference because "thickening" is not mentioned again, anywhere, in the reference.

As shown above, the teachings of Katayama are either inconsistent with or irrelevant to the claimed invention of this application. The Federal Circuit has made it clear that references used in a 35 USC 103 (a) rejection cannot render an invention obvious if the references do not in combination enable the claimed invention. With respect to a chemical compound, the court held that the test whether a particular compound described in the prior art may be relied upon to show obviousness is whether the prior art provided an enabling disclosure with respect to the disclosed compound. *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 297, 227 USPQ 657 (Fed. Cir. 1985), *cert. denied*, 475 U.S. 1017 (1986). The court has also held that "[i]n order

to render a claimed apparatus or method obvious, the prior art must enable one skilled in the art to make and use the apparatus or method." *Beckman Instruments, Inc. v. LKB Produkter AB*, 892 F.2d 1547, 1551, 13 USPQ2d 1301 (Fed. Cir. 1989) citing *In re Payne*, 606 F.2d 303, 314, 203 USPQ 245, 255 (CCPA 1979).

Because neither portion of the reference identified by the Examiner provides an enabling disclosure of an "edge enlarging portion for enlarging the edge area detected by the edge detecting portion" and the cited claim language is indefinite, the Examiner has failed to present evidence that the claimed invention as properly construed is disclosed by the reference. For these additional reasons, the claims of this application are not rendered obvious by Katamaya in view of Suzuki.

D. The Examiner has failed to identify any portion of the references disclosing the claimed systems and methods for correcting density.

In the Examiner's Answer, the Examiner cited col. 22, lines 47-61 and col. 27, lines 59-63 to show the "density correcting portion for increasing or decreasing the density of the image data of the edge area enlarged by the edge enlarging portion" of claim 1. The Examiner further stated that the replacement by an average or median value "constitutes an increase or decrease the density value of the image data." (Examiner's Answer at 3.) However, the Examiner has failed to identify any portion of the references disclosing the claimed systems and methods for correcting density.

Claim 1 of this application describes correcting the **density of the edge area enlarged by the edge enlarging portion**. While Katayama at col. 22, lines 57-60 does disclose the use of substitution data, this portion of the reference fails to teach the claimed feature. In fact, the cited portion of Katayama provides teachings which are contrary to and inconsistent with the claimed features. Katayama teaches only substituting data for a portion of an original image from which an edge has been eliminated. The reference does not teach the claimed "increasing or decreasing

the **density of the image data of the edge area enlarged by the edge enlarging portion**" because Katayama does not enlarge an edge and the disclosed system is not operative on an enlarged edge. Katayama teaches that

> More specifically, color character data is eliminated (FIG. 25B) from an image in which the color character is present as shown in FIG. 25A. At this time, by subtracting the color character, **an edge generated as shown in FIG. 25B is also eliminated**. As shown in FIG. 25C, data of a pixel which has a hue as in the color character pixel and which is included as surrounding pixels of the color character is also subtracted, **and the eliminated portion is substituted with an average value of other pixel data within this block.**

(Col. 22, lines 19-21, emphasis added.) It is clear that the cited portion of Katayama does not teach enlarging an edge or substituting any other values into portions of the image where an edge has been enlarged.

The Examiner also cited col. 27, lines 59-63 which corresponds to claim 22 and which is reproduced below:

> 22. An apparatus according to claim 19, further comprising means for substituting input an image data portion corresponding to a pattern obtained by said enlarging means with an average value of image data of pixels of the input image data.

As a preliminary matter, Appellant notes that claim 22 of Katayama includes language that makes it indefinite. Appellant submits that it is not clear from the claim itself or the specification what a "means for substituting input an image data portion corresponding to a pattern" is. Appellant notes that Examiner has not identified any corresponding structure in the specification in connection with this claim. Because this claim is both indefinite and lacks any identifiable corresponding structure in the specification, it is also not a disclosure that is enabled by the Katayama specification. As discussed above, the Federal Circuit case law has firmly established that a disclosure that is not enabled cannot render the claims of an application obvious.

Appellant notes that the specification of Katayama recites that "[t]he pixel data need not be replaced with the average value, but can be replaced with any value which is most frequently used." (Col. 5, lines 62-64.) As a first matter, Appellant does not concede that this teaches the "density correcting portion" of claim 1 of this application. Assuming *arguendo* that Katayama does teach a form of density correction, this portion of the specification forms part of a paragraph describing a first embodiment in which the operation is performed on "pixel data judged as the black line images." (Col. 5, lines 57-64.) Thus, the teachings of Katayama are limited to replacing pixel data judged as the black line images with frequently appearing, average, or median values.

The cited portions of Katayama do not teach that pixel data judged as the black line has been enlarged. It is clear from the reference that the pixel data judged as the black line is original image data. The replacement of this original image data with any value which is most frequently used or any other value does not and cannot teach correcting the density of an edge area enlarged by the edge enlarging portion. The reference does not teach "a density correcting portion for increasing or decreasing the density of the image data of the edge area enlarged by the edge enlarging portion" of claim 1.

E. The Examiner has not pointed to evidence of a motivation to combine Katayama with Suzuki.

In the Examiner's Answer, the Examiner concluded at p. 4 that "[i]t would have been obvious to one having ordinary skill in the art at the time the invention was made to use the scheme of Suzuki in the method of Katayama in order to accurately blacken the edge area for better color correction and encoding."

In both the Examiner's Answer and in the second Office Action, the Examiner acknowledged that Katamaya does not disclose increasing at least a density of a black component in image data including both color components and a black component. Therefore, the Examiner resorted to Suzuki to complete any case of obviousness. However, there is no

evidence in either Katamaya or Suzuki of a motivation for persons of ordinary skill in the art to have used the color correction means disclosed in Suzuki with the image encoding system of Katayama to produce the claimed systems and methods of image processing. This obviousness rejection fails because the Examiner has presented no evidence to support an essential element of the prima facie case of obviousness, that persons of ordinary skill in the art would have been motivated to combine the color correction means disclosed in Suzuki with the image encoding system of Katayama to produce the inventions as claimed in the rejected claims.

The Examiner concludes at page 4 of the Examiner's Answer that one having ordinary skill in the art would have been motivated "to use the scheme of Suzuki in the method of Katayama in order to accurately blacken the edge area for better color correction and encoding." This conclusion is further explained at page 9 of the Examiner's Answer. In support of this conclusion, the Examiner made the following statement:

> Katayama and Suzuki are in the image processing field, specifically in the field of correcting black character on color image. In addition, the claim language is open and broad. Katayama expressly teaches first three limitations...Although Katayama does not teach increasing density of black color such processing technique is taught by Suzuki...Moreover, Suzuki uses the technique to improve the image quality...Suzuki is cited, for sake of argument, to show that the scheme of increasing density of black is well known in the art. Finally, since the knowledge or suggestion to modify the teachings of the prior art to produce the claimed invention are all contained in both Katayama and Suzuki, it has apparently taken in to account only knowledge from the patents themselves. The obviousness to combine the references is properly established.

In support of this conclusion, the Examiner also stated at p. 4 that "Suzuki, in an analogous environment, discloses increasing at least a density of the black component in the image data includes color component and black component." No other supporting arguments or rationales were given for the motivation to combine. The Examiner concludes that "the knowledge or suggestion to modify the teachings of the prior art to produce the claimed invention are all contained in both Katayama and Suzuki, it has apparently taken in to account only knowledge from the patents themselves." Nowhere in the preceding statements does the

Examiner actually identify anything in the cited references that evidences any knowledge or suggestion to combine the teachings of either reference. This argument begs the question of why persons of ordinary skill in Katayama's art, the art of encoding images after black character removal, would have been motivated by a disclosure in Suzuki's art, the art of performing color correction, to use Suzuki's image correction means to correct the density of at least a black component wherein the image data includes a black component and color components.

While the Examiner stated at p. 9 that "Katayama and Suzuki are in the image processing field, specifically in the field of correcting black character on color image," the Examiner made a contradictory statement in the first paragraph at page 4: "Katayama does not explicitly mention increasing at least a density of the black component in the image data includes color component and black component." Appellant respectfully submits that Katayama and Suzuki are not in the same field. However, even if they are in the same field, the fact that both references disclose methods of image processing is such a general motivation that it does not respond to the evidentiary burden which the Examiner must satisfy to make out a *prima facie* case. Such a motivation is so broad that it does not answer the central question of why, out of all the references disclosing the use of color correction, would a person of ordinary skill in the art have chosen Suzuki as the disclosure to look to. The answer is apparent: Without Appellant's disclosure and claims as a roadmap, *no* person of ordinary skill in this art would have chosen Suzuki's image correction means for use in Katayama's image encoding system. This is classic, impermissible hindsight.

The Examiner's selected motivation is so general in the context of the relevant art as to constitute no more than the reference to a general level of skill in the art found deficient in *In re Lee* (277 F.3d 1338, 1343, 61 USPQ2d 1430, 1433 (Fed. Cir. 2002)). As emphasized by the court in *In re Lee*, the Examiner must present specific evidence of motivation, not the generalized evidence relied on in the Examiner's Answer:

> When patentability turns on the question of obviousness, the search for and analysis of the prior art includes evidence relevant to the finding of whether

> there is a teaching, motivation, or suggestion to select and combine the references relied on as evidence of obviousness. See, e.g., *McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339, 1351-52, 60 USPQ2d 1001, 1008 (Fed. Cir. 2001) ("the central question is whether there is reason to combine [the] references," a question of fact drawing on the *Graham* factors).

The burden imposed by *Lee* is not an impossible burden, as explained by the court in *In re Thrift*, 298 F.3d 1357, 1364-65, 63 USPQ2d 2002 (Fed. Cir. 2002), with respect to the references relied on by the Board in that case:

> In the present case, the reasoning articulated by the Board is exactly the type of reasoning required by In re Lee. Both the examiner and the Board clearly identified a motivation to combine the references, stating that the skilled artisan would have "found it obvious to incorporate the speech input and speech recognition techniques taught by Schmandt into the expert system of Stefanopoulos in order to reduce the need for less user friendly manual keyboard and mouse click inputs." Decision on Appeal at 5; accord Aug. 7, 1996 Office Action at 3. The motivation to combine the references is present in the text of each reference. The Schmandt reference itself verifies this motivation, stating that "allowing users to remain focused on the screen and keyboard, instead of fumbling for the mouse, would be beneficial in a workstation environment." Schmandt at 51. Stefanopoulos itself, while not expressly disclosing the use of speech recognition, sets forth the motivation to combine the references, stating that "there are alternative means to select the buttons, including . . . voice-activated transfer means, which may be readily adapted for use with the present invention by those skilled in the art." *'237* patent, col. 4, ll. 34-38.

The reliance in the Examiner's Answer on the arguments, even if true, that Katayama and Suzuki disclose image processing systems, that Suzuki uses the technique to improve image quality, that Suzuki and Katayama are in analogous environments, or that the teachings of Suzuki are well known comes nowhere close to the analysis and supporting evidence required by *Lee* and approved in *Thrift*. The Examiner has pointed to no disclosure in either Katayama or Suzuki that is evidence of any motivation to look from one reference to the other to solve any problem involved in either.

Based on *Lee* and *Thrift*, the appropriate question to ask again at this point in the analysis is: why, based on Katayama, would a person of ordinary skill in the art have had *any* reason to look at Suzuki and to use Suzuki's disclosure in conjunction with Katayama to arrive at the

claimed invention? There is only the same, reasonable answer: impermissible hindsight reliance on Appellant's disclosure and claims as a roadmap to choose Suzuki.

Appellant recognizes that an Examiner cannot search prior art to use in examining a patent application without reading the application and its claims first. That much "hindsight" is permissible and expected in the examination process. However, that is as far as hindsight in the examination process can go. Once the Examiner finds prior art that appears to be relevant based on the limited amount of hindsight that is permissible, *Lee* and *Thrift* require the Examiner to point to evidence within the prior art references themselves as to why persons of ordinary skill in the art would have been motivated to combine the disclosures so as to arrive at the claimed invention.

Appellant's position rests on the Examiner's failure to produce and rely on objective evidence of motivation in the prior art itself. Thus, even if the references taken together did show all the claimed features of this application, which they do not, there is no motivation to combine the two references. Accordingly, this rejection should be reversed.

II. The rejection of claims 4-6, 14-16 and 28-30 as being unpatentable over Katayama and Suzuki, and further in view of Tamura should be reversed.

As discussed in I. above, Appellant respectfully submits that there would have been no motivation to combine the teachings of Katayama and Suzuki as asserted by the Examiner and that several features of the claimed invention are not disclosed by either cited reference. Furthermore, Appellant respectfully submits that he has shown the patentability of at least the independent claims and that, accordingly, dependent claims 4-6, 14-16 and 28-30 are themselves patentable insofar as they depend from a patentably distinct independent claim. Appellant makes this assertion without reference to the independent bases of patentability contained within the dependent claims. Accordingly, this rejection should be reversed.

III. The rejection of claims 3, 13 and 27 as being unpatentable over Katayama and Suzuki, and further in view of Hirata should be reversed.

As discussed in I. above, Appellant respectfully submits that there would have been no motivation to combine the teachings of Katayama and Suzuki as asserted by the Examiner and that several features of the claimed invention are not disclosed by either cited reference. Furthermore, Appellant respectfully submits that he has shown the patentability of at least the independent claims and that, accordingly, dependent claims 3, 13 and 27 are themselves patentable insofar as they depend from a patentably distinct independent claim. Appellant makes this assertion without reference to the independent bases of patentability contained within the dependent claims. Accordingly, this rejection should be reversed.

CONCLUSION

For the foregoing reasons and the reasons set forth in Appellant's Opening Brief, Appellant respectfully requests that the rejections of claims 1, 2, 7-12, 17-20, 26, 27 and 31-34 under 35 USC 103(a) as being unpatentable over Katayama in view of Suzuki, claims 4-6, 14-16 and 28-30 under 35 USC 103(a) as being unpatentable over Katayama and Suzuki, and further in view of Tamura, and claims 3, 13 and 27 under 35 USC 103(a) as being unpatentable over Katayama and Suzuki, and further in view of Hirata, be reversed.

In the event that the transmittal letter is separated from this document and the Patent and Trademark Office determines that an extension and/or other relief is required, Appellant petitions for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952** referencing docket no. 325772014200.

Respectfully submitted,

Dated: July 19, 2004

By: _____

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